

Community-Engaged Scholarship and NSF's Broader Impacts

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Defining Engaged Scholarship

The collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the **mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.**

--Carnegie Foundation

The purpose of community engagement (scholarship) is the **partnership of college and university knowledge and resources with those of the public and private sectors to enrich scholarship, research, and creative activity;** enhance curriculum, teaching and learning; prepare educated, engaged citizens; strengthen democratic values and civic responsibility; address critical societal issues; and contribute to the public good.

--CIC-Big Ten)

Four Distinguishing Characteristics of Engaged Scholarship

- It is **scholarly**. A scholarship-based model of engagement embraces both the act of engaging (bringing universities and communities together) and the product of engagement (the spread of scholarship focused, evidence-based practices in communities).
- It **cuts across the missions of teaching, research** (knowledge of discovery and knowledge of application), **and service**, rather than being a separate activity..
- It is **reciprocal and mutually beneficial**; university and community partners engage in mutual planning, implementation, and assessment of programs and activities.
- It embraces the processes and values of a **civil democracy**.

NSF's Broader Impacts

Broader Impacts Timeline

- 1950 – NSF founded
- 1981 – Four criteria established
- 1997 – Criteria simplified
- **2002 – Proposals must separately address IM and BI or be “returned without review”**
- 2007 – Modified to include mention of “transformative research”
- **2011 – National Science Board “Task Force on Merit Review” reiterated IM + BI**

"As a federal agency, we need to stay **relevant** with those who entrust us with taxpayer funds. We need to reach out to Congress and other stakeholders and be proactive in explaining... **why we are vital to our nation's future.**"

*--France Córdova, Director
National Science Foundation*



"Each grant application [must be] **relevant** to the national interest."

*--Lamar Smith, Chairman
House Committee on Science, Space, &
Technology*

"We are enjoying a golden age of discovery, as exciting research continues to uncover new knowledge about our universe. However, a different kind of golden age -- that of ever increasing funding for American science and engineering -- is clearly over. Today, **public support for research must be earned**. We can no longer expect it in the form of a blank check and an undefined agenda. It is now more vital than ever for us, the research community, to make a convincing case to the public about the **tangible societal benefits** that flow from science and technology, and the **importance of investing adequately in research and education**."

--Lane, 1997

The Broader Impacts criterion encompasses the potential to **benefit society** and contribute to the achievement of specific, desired **societal outcomes**.

--National Science Foundation, 2017

Broader Impacts: Societal benefits of research



Why Do BI Matter?

- NSF has an annual budget of about \$7 billion
- NSF receives 50,000+ proposals and funds 11,000 each year
- **Congress** requires all proposals to be reviewed on intellectual merit and broader impacts

Why Do BI Matter?

- Accountability is a good thing
- Forces researchers to think more deeply about the relevance and implications of their work
- Reinforces/strengthens communication skills
- Engages and excites next generation of scientists and engineers
- Increases diversity in STEM fields

The BEST broader impacts plans are seamlessly integrated into the research.

--NSF Program Officer

National Science Board 2011

NSF Merit Review Criteria: Review & Revision

“The weakness of the BI criterion is [that] it is mysterious to people; it is not understood by PIs, prospective PIs, or [review] panelists.”

- R1: provide clear definitions of “transformative research and “qualifications of the PI”
- R2: include guidance on the types, amount, and the level of effort expected for BI activities
- R3: provide better guidance on the use of the two criteria and the relative weight of each
- R4: enable and encourage institutional support for PIs around BI
- R5: improve assessment of BI activities

Potential Target Outcomes for BI

- Full participation of women, persons with disabilities, and underrepresented minorities in STEM
- Improved STEM education and educator development at any level
- Increased public scientific literacy and public engagement with science and technology
- Improved well-being of individuals in society
- Development of a diverse, globally competitive STEM workforce
- Increased partnerships between academia, industry, and others
- Improved national security
- Increased economic competitiveness of the United States
- Enhanced infrastructure for research and education

What Qualifies as BI?

- The research itself
- Activities can be directly related to the project
- Activities can be supported by or complementary to the project

Creating A BI Plan



Broader Impacts Guiding Principles and Questions

<https://broaderimpacts.net/>

FOR NATIONAL SCIENCE FOUNDATION PROPOSALS

Overarching Questions

1. What is the potential for the proposed activity to benefit society and contribute to achievement of specific desired societal outcomes?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or institution to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities? Is the budget allocated for Broader Impact activities sufficient to successfully implement them?

QUESTION 1

What is the potential for the proposed activity to benefit society and contribute to achievement of specific desired societal outcomes?

Guiding Principles

- *The size of the target audience should be taken into consideration. For many BI activities that involve education, outreach, or public engagement, the size of the audience reached and the depth or intensity of their engagement are important considerations and represent a design tradeoff. A large number of individuals can be reached over a short period of time to introduce them to a scientific concept or raise awareness. A smaller number of individuals may be engaged for a deeper experience. It is important that the proposer be thoughtful about this tradeoff, make sure it is appropriate to the intended outcomes of the BI activity, and that the intended societal benefits are articulated.*
- *Other considerations can be the potential for scalability of the activities, either during the funding period or beyond, and sustainability of the activities beyond the grant.*
- *Various parameters may be included in the design of the BI activities. It is not necessary to include all parameters described, and one parameter is not necessarily more important than another. Other characteristics may include:*
 - *issues of building infrastructure within your organization*
 - *scalability*
 - *local community engagement*
 - *external partners*
 - *national scale efforts*

Guiding Questions

- **Are the BI activities being proposed clearly described?**
- **Is the audience being targeted clearly described and the rationale for engaging them clearly justified?**
- **Is the target number of engaged participants clearly described?**
- **How will the audience be recruited?**

QUESTION 2

To what extent do the proposed activities suggest creative, original, and transformative approaches?

Guiding Principles

- *All BI activities should be guided by the following principles, practices, and standards:*

Guiding Questions

- **Are the BI activities being proposed clearly described?**
 - **If so, how does the proposed activity differ from existing education research or outreach programs?**
 - **What new elements does the proposed activity bring to existing infrastructure or programs?**
 - **How might your proposed activity build on existing programs or research?**
 - **Is this proposed activity a new or innovative use of resources?**
 - **What is the value of the proposed activity?**
 - **How well grounded is the proposed activity in the literature, or what is the learning (not just for the proposer, but for the university, but for the community)?**
- **Is this a new BI activity?**
 - **What are the creative elements of the proposed activity?**
 - **How might this activity be transformative in the process, model, or outcomes?**

Ocean Scientist Broader Impact Wizard

Brought to you by [COSEE Networked Ocean World](#)



SCOTT GLENN, PHD
Professor, Rutgers University

COSEE NOW created the **Broader Impact Wizard** to help you develop a broader impact statement that will satisfy NSF Criterion II and fulfill your interest in communicating your science. The quick and easy five-step process will produce an outline of important points to include in your BI statement and will help frame discussions with your BI partners.

For more information about the wizard and an introduction to constructing effective broader impact projects, please view the video.

coseenow.net/wizard

Coming Back Around to Engaged Scholarship

Broader Impacts: More Than NSF

NIH-R25; R41/R42

USDA—AFRI: Integrated Research, Education, and/or Extension

USAID—Focused on outreach & education

Dept of Education

Foundations: Support your outreach & education with foundation funding.

Examples:

- Weinberg Foundation, Inc
- Kauffman Foundation→KC STEM Alliance



Community-Engaged Research

- Community-based, participatory research
- Applied research
- Contractual research (funded by government, non-governmental organizations, or businesses)
- Demonstration projects
- Needs and assets assessments
- Program evaluations

Community-Engaged Creative Activity

- Film
- Theater
- Music
- Performance
- Sculpture
- Writing
- Spoken words
- Multi-media
- Exhibitions

Community-Engaged Teaching/Learning

Formal (For-Credit)

- Service-learning
- Community engaged research as part of university classes
- Study abroad programs with community engagement components
- Online and off-campus education

Non-formal (Not-for-Credit)

- Pre-college programs for youth in K-12
- Occupational short course, certificate, and licensure programs
- Conferences, seminars, not-for-credit classes, and workshops
- Educational enrichment programs for the public and alumni

Informal (Not-for-Credit)

- Media interviews or "translational" writing for general public audiences
- Materials to enhance public understanding
- Self-directed, managed learning environments, such as museums, libraries, or gardens

Community-Engaged Service

- Technical assistance
- Consulting
- Policy analysis
- Expert testimony
- Legal advice
- Clinical practice
- Diagnostic services
- Human and animal patient care
- Advisory boards and other disciplinary-related service to community organizations

Community-Engaged Commercialized Activities

- Copyrights
- Patents
- Licenses for commercial use
- Innovation and entrepreneurship activities
- University-managed or supported business ventures, such as business parks or incubators
- New business ventures and start-ups
- Inventions
- Social entrepreneurship

What is the Infrastructure to Support BI?

- BI offices (elsewhere)
- Pre-college programs
- Community partnerships, including K-12
- Graduate School and Office of Undergraduate Education
- Undergraduate research programs
- Museum, planetarium, gardens
- OSU Extension
- College of Education and Human Ecology
- Communication departments/offices
- Digital offices/initiatives
- Partnerships with minority-serving institutions

OHIO STATE STEM INITIATIVES



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NSF Broader Impacts Merit Review Criterion

To encourage principal investigators to incorporate outreach, education, and diversity efforts into proposals for funding, the National Science Foundation's evaluation includes a Broader Impacts merit review criterion, which "encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes." All NSF solicitations contain this description:

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to the project. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such

Funding Opportunities

NSF CAREER

NSF IUOE

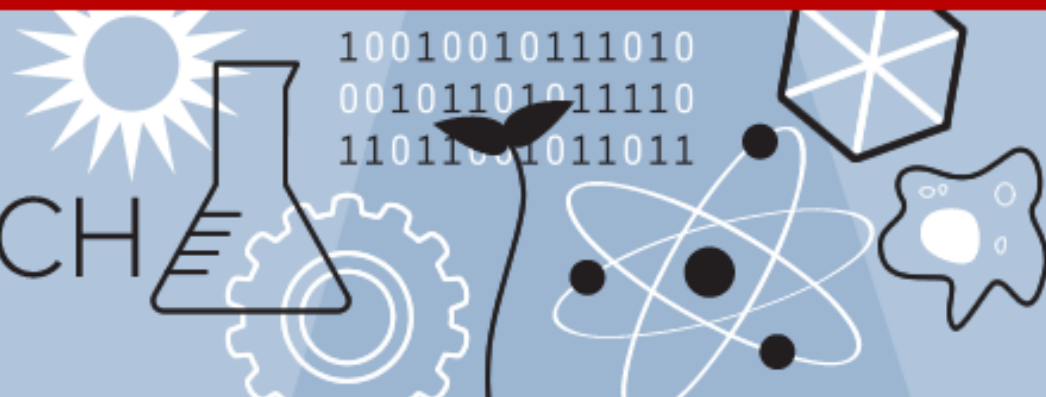
NSF Noyce

NSF Broader Impacts Merit Review
Criterion

Partners for Broader Impact

Postdoctoral Mentoring Plans

OHIO STATE STEM OUTREACH



STEM PROGRAMS ▾

STEM PARTNERSHIPS ▾

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Home » For Faculty/Staff » Funding Opportunities » Partners for Broader Impact

Partners for Broader Impact

These groups are experienced in collaborating with Ohio State faculty and staff to develop STEM outreach, education, and diversity efforts to accompany proposals for research funding, particularly in support of the National Science Foundation's [Broader Impacts merit review criterion](#).

AAAS Summer Enrichment

The [Department of African American and African Studies Community Extension Center](#) is requesting proposals from faculty and advanced graduate students for its [2013 Summer Enrichment Program](#) for

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Summit 2018



The organizing committee for the 2018 National Alliance for Broader Impacts Summit is pleased to announce that the theme for the summit will be *Creative Communication and Scholarship*. The 2018 NABI Summit will be held from April 25-27 in Providence, Rhode Island, and hosted by Brown University.

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